Hargreaves (W.)

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MALT LIQUORS;
THEIR NATURE AND EFFECTS.

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No one desires to be mistaken on any subject. If persons remain in error, it is because evidence is lacking to convince them of their mistake; for all are willing to embrace the truth, when they see it clearly. We know of no greater mistake than that held by many persons in this and other countries *that malt liquors are useful and nutritious.* It is the aim of the writer to convince those who shall deem it of sufficient importance to read this little tract, and to carefully consider its contents, that *malt liquors* are not only useless, but injurious. *Malt Liquors*, whether called by the name of porter, stout, ale, beer, or lager beer, are made of malt and hops, and all are essentially the same. Many drink them because they have acquired a liking for them, and believe them to be nutritious; others drink them from habit, and do not stop to reflect why they drink them. They take it for granted that they are good; because doctors prescribe them for their patients, as stimulants, tonics, and other imagined properties and virtues. Many persons, especially among our English and German citizens, can be easily convinced of the injurious effects of whisky, brandy, &c.; but it is very hard to make them believe that malt liquors are hurtful, or that the essential principle for which they drink them,—alcohol,—is the same as in whisky and brandy.

A strong belief in the virtues of ale, beer, &c., has been handed down from the earliest history of our English and German ancestors. This mistaken idea can only be eradicated by the true knowledge of the composition, properties, and effects of malt liquors.

It is thought by many that because malt liquors are made from barley, they still, as beer and ale, possess the nutritious elements of barley.

It was stated at the Brewers' Congress that the American brewers use about 3 bushels of barley for each barrel of 31 gallons of beer. The excise regulations of England allow only 2 bushels for a barrel. But we will allow that 3 bushels are used to make a barrel. A bushel of barley weighs about 52 pounds when taken to the maltster. The maltster soaks the barley in a cistern of water for 48 hours. It is then spread upon a floor from 6 to 8 inches thick, and stirred every day, for eight or nine days, (including Sunday,) and is occasionally sprinkled with water. The moisture and heat cause the barley to sprout, or grow; and it becomes spoiled, or half rotten, the same as grain is spoiled when left in the field too long, when the harvest is unfa-

vorable. To stop its growing further, it is put on a kiln to dry; when dry, it is put into a mill, which knocks off the sprouts, which, as "malt-cooms," are sold to the farmers for feed. The barley, when made into malt, weighs 38 pounds, or has lost 14 pounds, besides being spoiled. If we should leave wheat, potatoes, or any other vegetable product in the field until it should begin to sprout or rot, every one would say it was not fit for food. Yet the barley, in the process of malting, is made to rot before it is put on the kiln. Is barley fit for food when so rotted? This is the first process of making barley into malt liquors. The next process is mashing. If the brewer's object was to extract the nutriment from the malt, he would boil it; but by so doing he would have a thick nutritious substance, which would not suit his purpose. So he throws the malt into a vessel of hot water 176 degrees Fahrenheat, and lets it remain until all the sugar is extracted. He then carefully runs off the liquid until it ceases to be sweet, for the sugar is what he wants; but the starch and other nutritious substances of the grain he is very careful to leave behind. This residue contains not less than one-third of the nutriment of the barley, which is fed to the hogs and cows. The liquid, for which the brewer has used so much care, and taken so much trouble to obtain, is a sweet, non-poisonous, and somewhat nutritious liquid, though it might not agree well with the bowels. A person might drink a hogshead of it and not be intoxicated, for it contains no alcohol. The water in which the hops have been boiled is now mixed with the sweet liquor, and, when cooled to the proper temperature, the yeast or ferment is added. Now the mischief commences. That which was good becomes evil. Vinous fermentation takes place. The sugar is decomposed, and re-composition takes place. The elements of sugar, being separated, re-unite, forming two compounds,—carbonic acid and alcohol. Vinous fermentation is the first step in the decomposition of the grain, which, if not arrested, would go on to the next stage,—acetous fermentation,—and the liquid would become vinegar. The next step is "fining." As beer-drinkers do not like thick, muddy-looking beer, the brewer lets it settle, when almost all the remaining real nutriment of the barley is left at the bottom, called settlings or barrel-bottoms, which is either thrown away, or, as in England, sold to whisky distillers. The thicker the beer is, the more nutritious; the finer and clearer, the less.

We will now see how much food material is left in beer. If 3 bushels of barley, or 156 pounds, will make 1 barrel, or 31 gallons, to make 1 gallon of beer will take 5 1-5 pounds. What has become of this 5 1-5 pounds, or 83 1-5 ounces, of barley? Of this 83 1-5 ounces of barley used to make a gallon of beer, there was abstracted: In malting, as "malt-cooms," 20 ounces; in mashing, as "grains," 27 2-5 ounces; in fermenting, 13 2-5 ounces; in fining, as barrel-bottoms, &c., 9 ounces, or a total of 70 ounces, thus leaving in each gallon of ale, beer, &c., 13 1-5 ounces of the barley, being principally gum, worth very little, or nothing, as

nutriment, and scarcely deserves the name of food. This is the so-called "nutritious beverage," the "juice of malt," the boasted "liquid bread." Need more be said to prove that beer or ale is not "nutritious?" is not a "necessary of life?" Baron Liebig, the German chemist, says, "If a man drinks daily eight or ten quarts of the best Bavarian beer,—equal to lager beer,—in the course of twelve months he will have taken into his system the *nutritive constituents contained in a five-pound loaf of bread.*" "Why," you ask, "do persons feel stronger, if they are not nutritious?" They are not stronger,—they are deceived by the "mocker" alcohol, or the whisky,—the brandy in the beer. You drink beer to get strength, but receive a false stimulant or irritation, and the result is weakness; you drink ale to prolong life, but expend your vital forces. By drinking malt liquor, you spend in excitement to-day the vital forces that should support the system to-morrow; you expend both the principal and interest of your vitality, and will be the sooner constitutionally bankrupt. We have seen how the nutritious elements of the barley is disposed of in the process of being made into beer, &c. Let us now examine the liquors themselves.

THE COMPONENTS OF MALT LIQUORS

are water, alcohol, a gummy extract of malt or barley, and a little acetic acid, differing slightly in the various kinds, alcohol being the essential ingredient in all. This can be easily proven by any one with little cost. Take a pint of ale, which will weigh about 18 ounces, put it in a retort, apply to it a gentle heat, when about 2 ounces of alcohol will be driven off, which can be preserved. By increasing the heat, the remaining water, about 15 ounces, can be evaporated, which will leave at the bottom of the vessel about an ounce of black gummy extract of the barley, which no one would take as food, though it is all the nutriment contained in a pint of beer, that can impart nourishment. The following analyses is about the average of the liquors named:

NAME.	*Whisky,* per cent.*	*Wine,* per cent.*	*Porter, per cent.*	*Ale, per cent.*	*Beer, per cent.*	*Number of ounces in a pint of beer.*
Alcohol,	28 to 55	14 to 23	3.00	5.85	4.00	1 9-25 ounces.
Extract,			6.09	5.00	5.66	1 16-25 ounces.
Acetic acid,			.21	.15	.17	
Water.	72 to 45	86 to 76	90.70	89.00	90.17	13 ounces.
Total,			100.00	100.00	100.00	16 ounces.

The peculiar and essential principle of all fermented liquors, as well as distilled spirits, is alcohol,—an acrid-narcotic poison, of such a nature, if taken in large quantities, there is no antidote known. All kinds of inebriating beverages contain, as a general thing, from 4 to 50 per cent. of alcohol, and sometimes more of this poison. And though the balance is water, it is no very uncommon circumstance for a person to fall down dead after

* From the analyses by Prof. Draper of the liquors sold at the saloons, hotels, &c., in New York City, in the year 1869.

drinking a pint of whisky or brandy. The effect, in some instances, is as fatal as prussic acid. Dr. Percy injected 2½ ounces of alcohol into the stomach of a dog, which gave immediately a loud, plaintive cry, and fell lifeless. "Never," says Dr. Percy, "did I see every spark of vitality more effectually or instantaneously extinguished." "It would be difficult," says Dr. Gordon, "to find a more destructive poison than ardent spirits." Dr. Johnson says, "Prussic acid and ardent spirits are equally poison." You may ask, "Do you wish it to be understood that a simple glass of beer is a poison?" Emphatically, YES! Beer and all kinds of malt liquors contain, on an average, not less than 4 per cent. of alcohol, though there are malt liquors that contain as much as 8 and 10 per cent. Whatever is injurious in ardent spirits is contained in beer. The only difference between distilled spirits and malt liquors is one of degree. It is a great mistake to think that malt liquors are less injurious than brandy or whisky. True, beer, ale, porter, &c., do not contain so large a per cent. of alcohol; but the same quantity will not satisfy. They are drank for the alcohol; and what malt liquors lack in alcoholic strength, it is made up by drinking a larger quantity. As far as the alcohol alone is concerned, 2 ounces of beer will do less injury than 2 ounces of whisky; but the same quantity will not suffice. A glass of beer, that to-day would start the blood into lively motion, may fail to-morrow to produce that effect, and two may be required, and the next more.* Again, while the drinker would be content with a gill of spirits, he will drink a quart of beer or ale and not feel satisfied, and thus he will drink more alcohol than if he had taken whisky or brandy; for the inebriating effects of alcohol must be felt. Drunkenness by beer, as will be shown, is worse than by ardent spirits; and if we take the trouble to observe, it will be found that twice or three times as many persons become drunk on malt liquors than on ardent spirits, and that there are more malt liquor-drunkards than whisky-drunkards. The ingredients of malt liquors seem to produce an unnatural thirst. Some men will drink a couple of gallons of ale or beer in a day, and the alcohol contained will be almost equal to a quart of brandy or whisky. The writer, when in England, heard a person boasting of being sober;—and so he was to all appearance;—yet he had drank, from 8 o'clock in the morning to 7 in the evening, 24 half-pints of ale, all at different beer-shops, or had drank during the day more alcohol than if he had drank a pint of brandy. It is a well known fact that some of our German citizens will drink 30 or 40, or even 60, glasses of beer a day; thus imbibing more alcoholic poison than is generally taken by spirit-drinkers.

There is consumed annually in the United States not less than 44,572,188 gallons of the strongest alcohol that can be made, of which 12,014,953 gallons are drank in the form of malt liquors.

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*See "Light Wines, &c., as Substitutes for Distilled Liquors," by Wm. Hargreaves, M. D.

It is not the alcohol alone in ale and beer that makes them hurtful,—for the malt liquors of this country do not undergo perfect fermentation,—so that after they are drank a slight fermentation takes place, which injures the stomachs, especially of persons having weak digestive organs. Again, beer, ale, and particularly porter, have their narcotic power greatly increased by the bitters, that are necessary to their preservation, which by long use injures the nerves of the stomach, causing dyspepsia, &c. Malt liquor-drinkers are prone to apoplexy and palsy. In health the nervous system is neither too active nor depressed,—the circulation of the blood is in the condition best adapted for carrying on the process of waste and nutrition. Malt liquors act directly upon the circulation and the nervous system, by unduly stimulating and then depressing it, which is decidedly injurious. Every physician of much experience among the laboring classes, or those who drink large quantities of malt liquors, such as teamsters and other out-door workers, must have observed that, though they may be large men, and capable of great physical exertions while in the open air, yet they are not in a condition of real vigor, for they break down before they are far advanced in years, even if they do not fall victims to diseases and injuries, that appeared at first of the most trifling character. The regular users of malt liquors are the most unhealthy class of drinkers, for a very slight injury or a simple disease often proves fatal. "A copious London beer-drinker," says Dr. Grinrod, "is all one vital part. He wears his heart upon his sleeve, bare to a death-wound, even from a rusty nail or the claw of a cat." The worst patients in the Metropolitan hospital are the London draymen. Though they are apparently models of health and strength, yet, if one of them receives a serious injury, it is nearly always necessary to amputate, in order to give him the most distant chance of life. The draymen have the unlimited privilege of the brewery cellar. Sir Ashley Cooper was called to a drayman. He was a powerful, fresh-colored, healthy-looking man, who had suffered an injury in his finger, from a small splinter of a stave. The wound, though trifling, suppurated. He opened the small abscess with his lancet. He found, on retiring, he had left his lancet. Returning for it, he found the man in a dying condition. The man dyed in a short time. Dr. Gordon says, "The moment beer-drinkers are attacked with acute diseases, they are not able to bear depletion, and die." Dr. Edwards says of beer-drinkers, "Their diseases are always of a dangerous character, and, in case of accident, they can never undergo even the most trifling operation with the security of the temperate. They most invariably die under it." Dr. Buchan says, "Malt liquors render the blood sizy and unfit for circulation; hence proceeds obstructions and inflammations of the lungs. There are few great beer-drinkers who are not phthisical, brought on by the glutinous and indigestible nature of ale and porter. * * * * These liquors inflame the blood, and tear the tender vessels of the lungs to pieces." Dr. Maxson says, "Intoxicating drinks, whether taken

in the form of fermented or distilled liquors, are a very frequent predisposing cause of disease." "But," says the drinker, "I have drank liquors for years, yet I have never felt any pain or uneasiness." That may all be; and yet your stomach may be in an inflamed and ulcerated condition;—for Dr. Beaumont said, "St. Martin* had been drinking for several days, yet complained of no pain, but said he felt well, and had a good appetite; yet his stomach had some inflammatory and ulcerous patches on the mucus surface:" establishing the fact that mere feelings will not always be a correct test as to the healthiness of the stomach. St. Martin had not drank to intoxication, but only freely; yet his stomach was ulcerous and inflamed, which shortly recovered its natural appearance on abstaining from intoxicating drinks, clearly showing their poisonous and injurious nature. All are willing to admit that excess is injurious. All the evil effects of the excessive use of malt liquors are felt sooner or later by the moderate drinker, though in a less degree. There is more injury inflicted on the system by the regular, daily moderate use of liquors than by periodical drunkenness. The man who drinks 2 or 3 glasses of beer a day, receives more injury than he who becomes drunk on Saturday night and abstains until Saturday again. The man who gets drunk once a week has an interval of six days between his drinking, during which his system, in some measure, can overcome the effects of his excess; while the regular moderate drinker leaves his system no interval to overcome the injury of the poison, but continues day after day adding injury to injury. Hence regular moderate drinking is really more injurious than periodical drunkenness, with intervals of abstinence. No one can escape the effects resulting from the use of either spirituous or malt liquors. The penalty must be paid. If even beer, ale, porter, &c., are all that is claimed for them by the most enthusiastic admirer of the foaming beverage, still it is not wise to use them, because of their great expense. There are 8,009,969 barrels of beer, ale, &c., consumed annually in the United States, costing not less than $192,239,256. This cost is only for beer, ale, &c., made in this country, on which the duty is paid. How much is drank on which the duty is not paid is more than I can tell. It does not pay to drink. We never get an equivalent for

* St. Martin, a Canadian of French descent, by the accidental discharge of a musket loaded with duck-shot, was wounded on the left side, blowing off the integuments and muscles, the size of a man's hand, fracturing and carrying away the anterior half of the sixth rib, fracturing the fifth, lacerating the lower portion of the left lobe of the lungs, the diaphragm, and perforating the stomach. He recovered his perfect health, but a permanent aperture was left into his stomach, so that articles of food could be put into his stomach through this aperture, and the process of digestion observed. Dr. Beaumont engaged him, and by his experiments upon him gave us a vast amount of knowledge regarding digestion, the time required to digest the various articles of food, and the appearance of the stomach during digestion, and after drinking, &c., &c.

our money. We all like, when we spend our money, to obtain the worth of it. When we want bread and meat we go to the baker who gives the best bread and the largest loaf for the money, and to the butcher who will give us the best meat at the lowest price and the least bone. We are willing to go some distance from our homes to obtain goods at less cost. This is all right. Let us see if we use the same economy when we spend our money for liquors.

To make a gallon of beer it requires about 11 cents' worth of barley and 3 cents' worth of hops, a total of 14 cents, for which, as beer, costs you 80 cents. Of this 80 cents the maltster, brewer and seller receive 66 cents for selling and making this 14 cents' worth of barley and hops into beer,—rather a good price for cooking 14 cents' worth of food. You no doubt would think so if your wife should go to market and buy a steak worth 14 cents, and take it to a cook, who would charge 66 cents for cooking it. And if she set before you for dinner a dry, shrivelled, charred, indigestible something, that once was beef, weighing 8 or 10 ounces, but when served up for you weighing only three-quarters of an ounce, you would not be well pleased with your dinner; neither would you have a very exalted opinion of your wife's judgment, nor her household economy. And should you be very hungry, it is not very likely that she would be greeted with one of your most pleasant smiles. To say the least, you would request her to use more judgment and economy in the future.

Again, suppose that you and I, for a piece of work, have received 80 cents each. You, with your wages, buy a gallon of the best foaming beer or ale, while I buy 2 loaves of bread for 20 cents, 2 pounds of beef for 40 cents, 1 pound of sugar for 10 cents, ¼ pound of coffee for 8 cents, and 2 cents for milk. Place your gallon of beer on one end of the table and I will put my bread, beef, sugar, coffee, and milk on the other. Now look at your beer, and then at my lot of substantial and nutritious food. I will leave it to your own judgment to say which of us has wisely spent our money. You have for your 80 cents a gallon of spoiled water and alcohol,—a poison,—and an ounce or two of the gummy extract of barley, a little bitter of the hops, while I have for my money 5 or 6 pounds of substantial food, to give strength and vigor to both body and mind. Which of us has received the worth of our money?

Again, there is another difference between your purchase and mine. The more you drink of your beer, the more you desire, while after every piece of bread and meat I eat, and cup of coffee and sugar I drink, the less I desire of them. What you have must be consumed at one sitting, or you will have to throw it away,—it will not keep,—while mine will serve for several meals. But you, perhaps, will say, "I would not spend all my 80 cents for beer at once." But how often have you and thousands of others spent 80 cents and more at one sitting? The principle is the same, whether you spend your 80 cents at one or twenty sittings. You obtain no equivalent for your money; it is worse

than thrown away; for instead of beer giving you strength and vigor, as my purchase will, you are weaker than you were before you drank it. You no more need beer than a cat needs mittens. It will no more aid you to perform physical or mental labor than a pair of mittens will aid a cat to catch mice.

Great complaints are made by the lovers of the foaming beverages that beer and ale are not as good nor as pure as in "our grandfathers' days;" that they are terribly "doctored," "adulterated" with cœculus indicus, grains of paradise, quassia, wormwood, &c.; yet these drugs are no worse, nor as bad, as the alcohol, for which every one drinks malt liquors and distilled spirits. Take the alcohol out of beer, and not a person would drink it. The beer-drinkers,—good, easy souls,—are ready to tell you that whisky is bad, that they would not drink it for any thing; yet they do not seem to be aware that when they take their favorite, foaming beverage, that they are only swallowing a mixture of hop-water and whisky, colored and flavored to their taste. Temperance lecturers, even, will sometimes spend a whole evening endeavoring to convince their audience of the poisonous effects of alcoholic liquors by adulterations, as though any thing that is put in them could be worse or more poisonous than the alcohol. The purest beer that can be made to suit the modern beer-drinkers must be strong enough for them to feel the effects of alcohol, or, as Shakespeare styled it, the "devil."

Let no one deceive himself by taking beer to be nourished. Thirty years' experience and scientific investigation have established the fact that it does not nourish. We have seen that malt liquors are poisonous, expensive luxuries. Hence, the sooner they are banished from our midst the better for our race, now and in the future.

Dear reader, we leave this subject for your consideration, and also your action in the future regarding the use of intoxicating drinks, and the legalized trade in them. Ask yourself if it is not your duty and interest to aid, by your vote, to banish the licensed liquor traffic from our city, state and nation? There is no great interest of the state or individual but what is interfered with by this traffic. Our young and old people are alike its victims; no sex is spared; nothing is too pure, too sacred, for its polluting touch to defile. It destroys the happiness of our people in time and eternity. The power to remove this great evil is in your hands. The responsibility of this traffic rests upon every citizen who holds the ballot or has the least influence. Ask God for His direction, vote in His name against the traffic, and leave the rest to His keeping.

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